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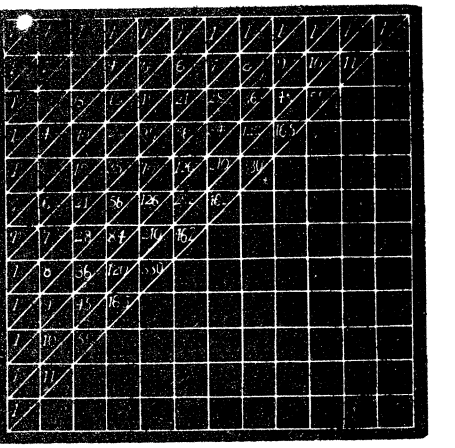
PASCAL'S ARITHMETICAL TRIANGLE.

By GEORGE LILLEY, Ph. D., LL.D., Ex-President of Washington State Agricultural College and School of Science, Portland, Oregon.

I do not remember of having ever seen an account of this interesting device in any of our American text books, and, so far as I am able to ascertain, it has not been published in this country. The accompaning diagram explaines itself.



To find any number, in a triangle, take the sum of the number immediately above and the number immediately to the left of the required number, or take the sum of the numbers immediately above and to the left of the required number. Thus, the 7th number in the 4th row $=28+56=84$, or

$$28+21+15+10+6+3+1=84.$$

The numbers on the diagonals are the coefficients of the expansion of a binomial.

The mth number in the nth row is given by the formula

$$\frac{\lfloor m+n-2}{\lfloor (m-1) \lfloor (n-1)}\ .$$

Thus, the 7th number in the 5th row

$$= \frac{\lfloor 7+\ -2}{\lfloor (7-1) \lfloor (5-1)} = \frac{\lfloor\ 10}{\lfloor 6\ \lfloor 4} = \frac{1.2.3.4.5.6.7.8.9.10}{1.2.3.4.5.6.1.2.3.4} = 210., \text{ etc.}$$

LOGICAL DEDUCTIONS FROM THE HYPOTHESIS THAT THE ANGLE-SUM IS LESS THAN TWO RIGHT ANGLES.

By Professor JOHN N. LYLE, Ph. D., Professor of Natural Science, Westminster College, Fulton, Missouri.

Let ECF be any individual rectilineal triangle whatever whose angle sum is assumed to be less than two right angles.